

REMARKS:

Claims 1-13 are pending and stand rejected.

- 5 Claim 1 has been amended to incorporate the limitations of claim 3. Claim 3 has been cancelled without prejudice. Since the Examiner previously objected to the term "graftable" the salt is described as having a single C=C double bond – supported on page 11, line 14 of the English translation of the PCT application.

- 10 Claim 1 was also amended to limit the compound to be grafted to one containing a single C=C bond and at least one polar functional group that is not a carboxylic acid salt functional group. This amendment is supported on page 9, lines 2-4 and 15-16 of the English translation of the PCT application.

35 U.S.C. §112

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Claims 8 and 10 stand rejected under 35 U.S.C. §112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular:

- 20 In claim 8, there is no antecedent basis for "content of metal salt". Claim 1 has been amended to include a metal salt, providing antecedent basis for claim 8.

In claim 10, the inclusion of trademarks are deemed to render the claim indefinite. The Trademarks have been removed, since the active chemical component of the trademarked product is already identified.

25 35 U.S.C. §102

- Claims 1-3, 9 and 10 stand rejected under 35 U.S.C. §102(b) as being anticipated by Dahl et al. (WO 90/15828). The Dahl reference fails to teach Applicant's required amended claim element of a stabilizer is a metal salt having a single C=C double bond or a mixture of a metal salt having a single C=C double
30 bond and an antioxidant, and therefore fails to present a *prima facie* case of anticipation.

- The Dahl reference teaches a graft radiation method for forming a fluoropolymer ionomer by adding grafting monomer to a fluoropolymer and irradiating. The Dahl reference even mentions on page 10, lines 23-25 that the
35 stability of the monomer and grafted products toward radiation is important –

- without describing how stability is accomplished – other than listing monomers useful in the process. Finally, on page 13, line 28, the Dahl reference mentions that the fluoropolymers of the invention can be used in admixtures or compositions with various additives, including antioxidants and stabilizers. There is no teaching or suggestion in the Dahl reference of Applicant's specific stabilizer that is an organic metal salt that is grafted onto the fluoropolymer.

35 U.S.C. §103

10 Dahl in view of Murphy

Claims 5-8 stand rejected under 35 U.S.C. §102(b) as being unpatentable over Dahl et al (WO 90/15828) in view of Murphy (US 5,409,997).

- The Dahl reference is discussed above, and fails to teach or suggest all of
- 15 Applicant's claim limitations, including a graftable metal salt.

The Murphy reference describes the cross-linking of fluoropolymers using difunctional "coagents". These difunctional coagents include metallic diacrylates and dimethacrylates. The purpose of the multiple double bonds in the same molecule to react with two different polymers -- resulting in a crosslink. For

20 example zinc dimethacrylate or zinc diacrylate (Col. 3, line 36)

- Applicant's graftable metal salt specifically has only a single double bond -- for example zinc acrylate or zinc methacrylate (page 11, line 26). The important difference is that Applicant's graftable zinc acrylate consist of two separate acrylate ($\text{CH}_2=\text{CH}-\text{COO}^-$) moieties complexed with a single Zn^{+2} , while the
- 25 Murphy diacrylates contain two double bonds within the same moiety.

The Murphy difunctional coagents provide crosslinking, while Applicant's single C=C bond metal salts act as graftable stabilizers.

- The Murphy reference fails to teach or suggest Applicant's graftable metal salt, and therefore fails to heal the deficiency of the Dahl reference to teach or
- 30 suggest all of Applicant's claim limitations, as amended.

Further the Murphy reference teaches away from Applicant's claims. Applicant claims a graftable compound having a single double bond.

- "However, the presence of more than one double bond in the graftable compound may cause crosslinking of the fluoropolymer, and therefore a modification in the rheological properties, or even the presence of gels, which is undesirable. It may therefore be difficult to achieve a good level of grafting, while limiting crosslinking. Thus, graftable compounds
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containing only a single C=C double bond are preferred.” (Page 10, lines 14-23.)

Thus the teaching of Murphy of a difunctional coagent not only fails to teach or suggest all of Applicant's claim limitations, but it teaches away from Applicant's amended claims.

Dahl in view of Gotcher et al.

Claims 12 and 13 stand rejected under 35 U.S.C. §102(b) as being unpatentable over Dahl et al (WO 90/15828) in view of Gotcher et al (US 4,353,961.

The Dahl reference is discussed above, and fails to teach or suggest all of Applicant's claim limitations, including a graftable metal salt.

The Gotcher reference is a secondary reference cited for its disclosure of melt-processable PVDF for wire coatings. The Gotcher reference fails to teach or suggest Applicant's graftable metal salt, and therefore fails to heal the deficiency of the Dahl reference to teach or suggest all of Applicant's claim limitations, as amended.

In view of the above, the Applicant believes that the reasons for rejection have been overcome, and the claims, as amended herein, should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

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Respectfully submitted,



Date: 1/6/2010

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